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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,343	05/15/2001	Steven Wayne Smith	DP6760 US NA	8850
23906	7590	04/14/2004	EXAMINER	
E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			DEL SOLE, JOSEPH S	
			ART UNIT	PAPER NUMBER
			1722	

DATE MAILED: 04/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/855,343

Applicant(s)

SMITH ET AL.

Examiner

Joseph S. Del Sole

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003 and 08 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-27 is/are pending in the application.
- 4a) Of the above claim(s) 15-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10, 12-14 and 27 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 15-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement on 11/24/03.
2. Applicant's election with traverse of claims 1-14 on 11/24/03 is acknowledged. The traversal is on the ground(s) that the search and examination can be made without serious burden and that the claims of the designated groups have not acquired a separate status in the art. This is not found persuasive because it would be a burden to search the subclasses of classes 264 and 428. While art relevant to the patentability of one group might be found in the other classes, any art relevant to the elected apparatus claims should be located in the appropriate class 425 search, making searches in classes 264 and 428 unnecessary for the elected invention.

The requirement is still deemed proper and is therefore made FINAL.

3. This application contains claims 15-26 drawn to an invention nonelected with traverse on 11/24/03. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-4, 6, 8-10, 12-14 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linz (5,536,157) in view of any of Vassilatos (4,687,610), Schilo et al (5,612,063) or Knox (4,156,071).

Linz teaches a finish applicator (Fig 1, #6) having a base plate having a peripheral edge which corresponds to the cross-section of the filament array (Fig 1, #6) and a body portion having a top and bottom concentric therewith and connected to said base plate (Fig 1, #5"), wherein the bottom corresponds in shape to the shape defined

by the peripheral edge of the base plate, and the surface formed by a plurality of lines drawn between the top and the bottom tapers outwardly with respect to the direction of movement of the filament array; a peripheral delivery slot (Fig 1, #10); the peripheral delivery slot communicates with a peripheral fiber contact surface (Fig 1, #6) on an outer surface of the body portion; a arm having channels for delivery and drainage of the finish (Fig 1, #11), wherein the arm supports the applicator and further wherein the arm is connected to the peripheral delivery slot; the applicator is mounted on a linear motion device; and additionally Linz teaches a melt spinning apparatus (Fig 1) having a spinneret having a plurality of capillaries (Fig 1, #1); a polymer delivery source which is arranged to communicate with the spinneret and deliver molten polymer therethrough to produce a continuously moving array of molten polymeric filaments corresponding to the arrangement of capillaries in the spinneret (Fig 1); a quench zone (Fig 1, #14) positioned below the spinneret and arranged to receive and cool the array of molten filaments as they move therethrough; the finish applicator being a conical-shaped finish applicator and located below the quench zone; the base plate has a peripheral edge which corresponds to the cross-section of the array of moving molten filaments; a means for moving the finish applicator into and out of the array of filament (Fig 1, #11); the finish applicator has one or more peripheral finish delivery slots that communicates with a peripheral fiber contact surface (Fig 1, #6); the finish applicator is positioned a distance ranging from 200 mm to 400 mm below the quench zone (col 6, lines 17-26); and the array of the filaments being annular have an inner and an outer filament array

diameter that determine the diameter of the finish applicator in a range of 70% to 120% of the outer filament array diameter (Fig 1).

Linz fails to teach the quench zone being a radial arranged to cool by passing a cooling gas inward with respect to the array of moving filaments.

Vassilatos teaches a spinneret with a radial quench zone (Fig 1, #50 and #55) arranged to cool by passing a cooling gas inward with respect to the array of filaments for the purpose of uniformly distributing gas (col 2, lines 22-25). Knox teaches a spinneret with a radial quench zone (Fig 1, #11) arranged to cool by passing a cooling gas inward with respect to the array of filaments for the purpose of symmetrically introducing cooling air around the filaments (col 13, lines 53-61). Schilo et al teach a spinneret with a radial quench zone (Fig 2, #13 and #14) arranged to cool by passing a cooling gas inward with respect to the array of filaments for the purpose of uniformly solidifying filaments (col 3, line 56 - col 4, line 26).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Linz with a radial quench zone arranged to cool by passing a cooling gas inward with respect to the array of filaments as taught by a) Vassilatos because it uniformly distributes the cooling gas; b) Knox because it symmetrically introduces cooling air around the filaments and c) Schilo et al because it uniformly solidifies the filaments.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Linz (5,536,157) in view of any of Vassilatos (4,687,610), Schilo et al (5,612,063) or Knox

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(4,156,071) and further in view of either of Stibal et al (4,756,679) or Kyocera Corp (JP 10-77522).

Linz, Vassilatos, Schilo et al and Knox teach the apparatus as discussed above.

Linz fails to teach the finish applicator having a filament contact surface coated with ceramic oxide.

Stibal et al teach a filament deflector (Fig 1, #11) coated with ceramic (col 4, lines 54-65) for the purpose of avoiding the tendency of filaments to adhere to the apparatus. Kyocera Corp teach finish applicator (Fig 1(A), #12) made of ceramic for the purpose of reducing sliding friction.

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Linz with a filament contact surface coated with ceramic as taught by either Stibal et al or Kyocera Corp because it reduces the friction/ adhesion of filaments to the apparatus body.

Allowable Subject Matter

9. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach or suggest a finish applicator for a spinneret, that is below a quench zone and only positioned a distance ranging from 120 mm to 200 mm below the spinneret, wherein the applicator has a base plate and a body portion connected to the base plate, wherein the surface formed by a plurality of lines drawn

between the top and bottom surfaces of the body portion tapers outwardly with respect to the direction of movement of the filament array.

Response to Arguments

11. Applicant's arguments filed 11/24/03 have been fully considered but they are not persuasive.

The Applicant argues that Linz is designed to quench filaments by blowing air radially outward toward the fibers and that conversely the quench zone in Applicants' claimed invention receives filaments cooled by gas passed inward.

While this is true, the combination of references teaches the obvious modification of Linz to include a quench zone that passes gases inwardly instead of outwardly.

The Applicant argues that neither Vassilatos nor Schilo teach a finish applicator.

While this is true, Vassilatos and Schilo are merely cited to teach the equivalent alternative of a quench zone passing gas inwardly.

The Applicant argues that there is no suggestion to combine Linz with a system that uses inward directed gas. The Applicant also argues that there is no motivation to combine the outwardly directed gas of Linz with an inwardly directed gas.

The Examiner disagrees. Vassilatos, Knox and Schilo provide the respective motivations of uniformly distributing gas, symmetrically introducing cooling air around the filaments and uniformly solidifying filaments. Furthermore, the quench zone of Linz could be modified by replacing outward flow with inward flow without destroying Linz. The product formed by Linz would be unchanged, merely the apparatus would be modified.

The Applicant argues that one would not look to an apparatus that is designed to work in a fashion that is exactly opposite as desired and then modify that apparatus to make it work in contravention of its original design.

The Examiner disagrees. The purpose of Linz is to apply a finish to cooled filaments. One looking to simplify cooling of the filaments would look to designs that cool in an opposite fashion provided they similarly cool filaments such that the purpose of applying a finish is not destroyed. Blowing cooling gas inwardly enables greater control of cooling the filaments (the openings of Linz' #4 are fixed and thus only the pressure of gas sent to #4 can be changed), and thus there is obvious motivation to modify the quench zone of Linz as taught by Vassilatos, Knox and Schilo as discussed above.

The Applicant argues that Stibal and Kyocera do not teach the inward cooling that Linz fails to teach.

The Examiner agrees, however Stibal and Kyocera are not cited to teach inward cooling; rather, the Examiner again points to Vassilatos, Knox and Schilo to show inward cooling.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

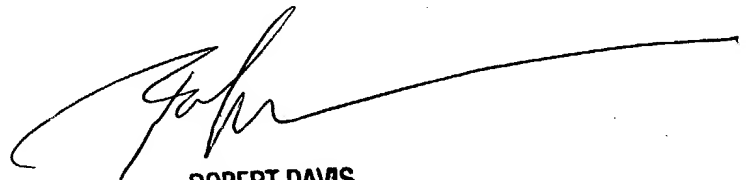
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph S. Del Sole whose telephone number is (703) 308-6295. The examiner can normally be reached on Monday through Friday from 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Wanda Walker, can be reached at (703) 308-0457. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for non-after finals and (703) 872-9311 for after finals.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Joseph S Del Sole

J.S.D.
April 7, 2004



ROBERT DAVIS
PRIMARY EXAMINER
GROUP 1300 1700

4/12/04